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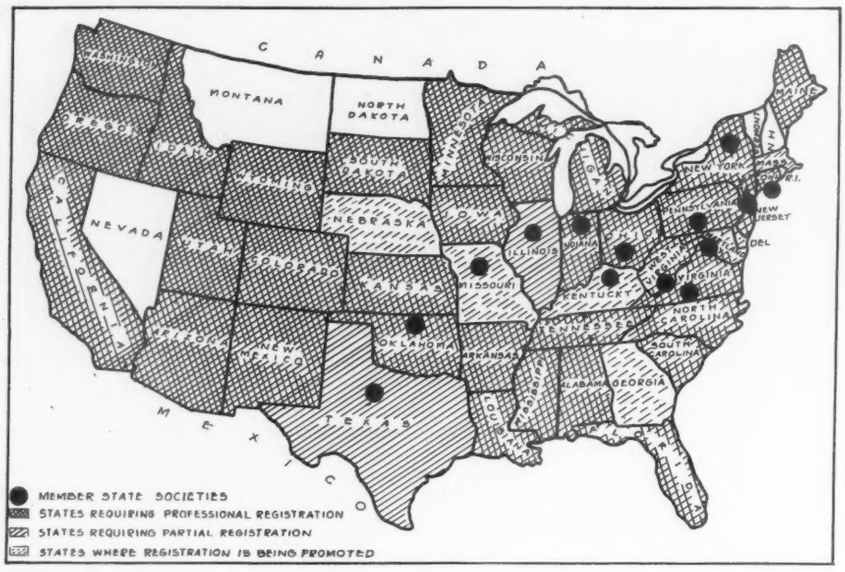

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Editorial Staff

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ROBERT HALL CRAIG
Editor-in-Chief

ARTHUR V. SHERIDAN
Associate Editor

WILLARD S. CONLON
Business Manager

Editorial and Advertising Offices
222 North Third Street
Harrisburg, Pennsylvania

Business Office
National Press Bldg., Washington, D. C.

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THE COVER

We are attempting to emphasize to Engineers the most important current happening—the possibility of limiting the Supreme Court power. Engineers should give serious thought to such action.

Supreme Court Members
Photo by—Underwood & Underwood

Capitol at Washington
Photo by—Bachrach

The American Engineer assumes no responsibility for statements or opinions expressed by contributors. Their names identify the source of the same.

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Current Opinion About The Engineer

Science and Society

"It is to the engineer that we must look for guidance," remarked Dr. Nicholas Murray Butler, in his discussion of our perplexed times before the Society for the Promotion of Engineering Education. If our problems are not all technological, at least they demand the kind of analysis that we associate with science. It was, therefore, good to learn from others who addressed the society that the technical schools are aware of their new responsibilities, and that their curricula now include courses in the history of civilization, economics, psychology and the humanities. As a result, the engineering student of today should go out into the world realizing that the bridge or the central station system that he designs is not only a technical convenience but another extension of an artificial environment.

But there was also force in the objection raised by an engineer who reproved the untechnical for their ignorance of science and technology. It is clearly not enough to imbue chemists and engineers with the conviction that they are builders of a civilization. Lawyers, artists, business men must be made aware of what Millikan, Einstein, Compton and Morgan mean in their lives. At least they should understand the rudiments of science, know something of its methods and ideals, grasp the meaning of the new discoveries made in the laboratories of the physicists, geneticists and biochemists, and realize that science is in the throes of an upheaval which will have consequences as profound as those that followed the publication of Galileo's and Newton's works. So a new outlook is demanded not only from engineers but from legislators, public officials, statesmen, heads of huge industrial enterprises. Here we go to the very roots of education. We need eclectic teachers who will reveal the cultural aspects of science and technology to the students who take the arts courses.—*The New York Times, Monday, December 7, 1936.*

Get The Idea

The first thing is to *get the idea* that the real business of Business *now* is to create for the first time a supply of all things needful for our people at a cost that will permit them to flow to our people. *Get the idea.* The *idea* attracts or creates its own *means* of realization. That is the plain record of economic history. This idea will entail revolutionary improvements in our industrial setup. Management will have to sweat its brains to discover new ways to place needful goods within reach of present purchasing power. Stooping to present conditions without lowering a single standard, Business will increase that purchasing power, and in the end save its own soul and the nation's economic life.

The manufacturer needs no mastery of economic theory, he needs no insight into the mystery of finance, he need consult with no one but himself, to do this; he need only hitch his job to this *idea* to make goods easily available to the entire range of people who need and could use them. This is a business motive superior to the profit motive, more dynamic than the profit motive yet not antagonistic to it, for the man thus motivated will have profits and to spare and all the business he can do. ENGINEER-MANAGERS, put upon this job, could do it. Money-minded managers might not take to it so readily.—*Taken from talk by W. J. Cameron on the Ford Sunday Evening Hour, December 6, 1936.*

Engineers Warned to Study Unionism

The study of economics and of labor relations should be as fundamental in management training for engineers as knowledge of their own particular science, in the opinion of Joseph W. Roe, Professor of Industrial Engineering at New York University.

Professor Roe spoke on "Humanistic Subjects in Management Training for Engineers."

He declared that "collective bargaining, in some form or another, is here to stay," and that engineers should know the principles and history of it and the "conditions from which it was a reaction.

"Every engineer should have a knowledge of the capitalistic system which is under fire in all parts of the world," he continued. "He should know its strength, its weakness, and know how to defend what is sound in it. It is fundamental in the intelligent practice of engineering that an engineer should be a good working economist.

"The engineer should know socialism and all the other isms. Industrial revolutions cause enormous dislocations in human relationships. He should get away from stupid attitudes toward labor unionism. Many high union leaders are better informed on industrial history than executives.

"The whole problem of company unions: theoretically, it is a fine form of cooperation, but if you know the history you would know it has been checkered. You should know the whole unemployment problem, how it can be met and how the causes can be removed.

"All of these subjects—economics, industrial history and industrial relations—are facing the engineer who should know them as much as he does chemical, mechanical, civil and other engineering."—*New York Times.*

EDITORIAL . . .

Engineers, The New Year Is Ours ! ! !

The President recommends a new Federal Bureau—a Department of Public Works—ENGINEERING!

The motor industry is booming—ENGINEERING!

Railroads are being electrified—ENGINEERING!

Great dams and bridges are being built—ENGINEERING!

On every side one sees the accomplishments of the Engineer's practical scientific skill. This is an engineering age—civil, mechanical, electrical, chemical, architectural—

Our national business recovery—the Administration's program—is based on engineering achievement. So we say—THE NEW YEAR IS OURS!

What Shall We Do With It ? ? ?

Here is a grave responsibility. Let us approach it with a seriousness of purpose worthy of the high ethical calling of our profession. Let us busy ourselves in our work as if the whole future of the nation depended upon our collective efforts! Who knows but it does?

For the immediate future all prognosticators sense the upward trend. For example, "Architectural Forum" forecasts for 1937 these new building construction volumes—

Residential	$1,250,000,000
Commercial-Factory	700,000,000
Educational	325,000,000
Public Buildings	120,000,000
All other types of public and institutional building	220,000,000
Public Works—Utilities	1,000,000,000
Total	$3,715,000,000

This is an approximate 39% increase over 1936—more than a third!

There is no doubt of it—the engineering profession has never failed the nation. It carries on through partisan strife—through national business depressions—through world wars. It has not failed! . . . It will not fail!

We do, as Engineers, greet 1937 as a glorious opportunity.

Will we catch the ball?
Will we carry that ball the length of the field?
Will we kick the goal?

NATIONAL SOCIETY NEWS

Itinerary of ARTHUR V. SHERIDAN
President, American Society of Professional Engineers

Jan. 12—District of Columbia Society at Raleigh Hotel, Washington, D. C.
Jan. 16—Oklahoma Society at Oklahoma City, Oklahoma. Two hundred Engineers attending annual meeting.
Jan. 18-19—Austin, Texas
Jan. 21—New Orleans, La.
Jan. 22—Jacksonville, Florida
Jan. 23—Miami, Florida
Jan. 27—Gainesville, Florida, then to Atlanta, Georgia
Feb. 11, 12, 13—Ohio Society—annual meeting at Columbus, Ohio
Feb. 13—Albany, N. Y.

President Engineer Sheridan's talk before the District of Columbia Society covered the history of registration laws and convinced the engineers in the District that limited registration law, as suggested by some groups, is not adequate. The bill is being promoted in the District of Columbia annual meeting.

A RESOLUTION

WHEREAS Engineer H. E. Babbitt, Vice-President of the National Society of Professional Engineers, has because of the pressure of personal business, submitted his resignation to President Arthur V. Sheridan, as of November 27, 1936, and

WHEREAS Engineer Babbitt has rendered signal service to the National Society of Professional Engineers, as Chairman of the Public Relations Committee, in the year 1935 and as National Director in the Society for the Illinois Society of Professional Engineers in 1936, which office he will continue to hold, and

WHEREAS Engineer Babbitt has recommended that Engineer H. J. Fixmer, Past President of the Illinois Society of Professional Engineers, because of his interest in the ideals and purposes of this Society; and his willingness to accept the duties and obligations of the office of Vice-President; and his eminent qualifications to fill said office, now

THEREFORE BE IT RESOLVED: That the Board of Directors does herewith accept the resignation of Vice-President H. E. Babbitt, with sincere regret and be it further

RESOLVED: That the Board of Directors does herewith; in respect to the recommendation of Engineer Babbitt, elect Engineer H. J. Fixmer, to fill the unexpired term of Engineer Babbitt, as Vice President of the Society.

BOARD OF DIRECTORS, N. S. P. E.

ACTIVITIES OF THE SECRETARY

The office of an Executive Secretary is apt to be a thankless job, as few of us appreciate the untiring efforts and long hours contributed to an organization by this very necessary member of its executive staff.

Following is a brief resume of some of the most recent activities of Willard S. Conlon, Executive Secretary of the National Society of Professional Engineers, in the interest of engineering.

Through the kindness of Rear-Admiral Norman Murray Smith, Chief of the Bureau of Yards and Docks of the Navy Department, Mr. Conlon addressed a meeting of approximately forty-five engineers connected with the Bureau late last year on the aims, purposes and accomplishments of N. S. P. E. His address also covered the License Law, its history, present status and the functions of the National Bureau of Engineering Registration, with particular emphasis on the proposed District of Columbia Law, outlining specific reasons as to why a limiting License Law should not be considered for enactment.

In addition to securing members for the District of Columbia Society, Mr. Conlon was able, through the kindness of Admiral Smith, to convince some of the members of the Bureau that a limited License Law is not to the interest of the engineering profession.

Secretary Conlon also addressed the Faculty of the Engineering School of the Catholic University recently.

NEWS LETTER

This will serve to advise that Engineer Robert Hall Craig, 222 N. Third Street, Harrisburg, Pennsylvania has been appointed Chairman of the Publication Committee and Editor of THE AMERICAN ENGINEER. Let's all cooperate by forwarding items of news value direct to Engineer Craig, and too a letter of welcome to Engineer Craig, I am sure would be appreciated.

Congratulations are in order also to Engineer H. J. Fixmer, 207 City Hall, Chicago, Illinois, who was elected Vice-President of NSPE by the Board of Directors as of December 22, 1936, to fill the unexpired term of Engineer H. E. Babbitt who resigned because of the pressure of personal business. Engineer Babbitt will continue to serve as Director from the Illinois Society.

The Secretary has just returned from a flying trip to the Middle West for the purpose of organizing two new State Societies for NSPE.

An Open Letter from The New Editor to The Membership

What would you do if you were Editor of THE AMERICAN ENGINEER? Do not answer too hurriedly because, upon your composite answer the growth of this magazine, and indirectly the Society's growth may depend.

But *do* answer!—by letter to the Editor—telling him exactly your views upon how the publication should be prepared and issued.

The general Editorial Policy was laid down in January 1935 when THE AMERICAN ENGINEER became the official publication of the National Society of Professional Engineers;—we are in accord with it;—we will follow it;—here it is:

> "The publication shall be conducted on a plane commensurate with the dignity of a profession and in conformity with the objectives of the Society.
>
> Editorial space shall be restricted to matters of public concern and to the presentation of the social, economic and professional problems and aspirations of Engineers. Articles and papers relevant to the practice of engineering as an art or an applied science shall not be acceptable material.
>
> The publication shall not be used to exploit or promote personal interests of subscribers or advertisers.
>
> All editorial matter shall be subject to edition or rejection by the Editor."

But how about the physical make-up of the magazine—Do you want color—do you want illustrations—what emphasis shall be laid on local Chapter Activities—what stress shall be given to Federal and State Legislation.

Let us have a free and open discussion—then when your desires are determined—we'll "carry on" in your way.

ENGINEERS—ATTENTION—FLOODS

As this issue of THE AMERICAN ENGINEER goes to press, the worst flood in the history of the Ohio River and middle Mississippi is raging.

Our Chapters in western Pennsylvania, southern Ohio, Kentucky and adjoining areas are lending every effort to help.

Crises, such as these, bring out the humane side of engineering.

We want to devote our February issue to floods and flood control. Please *send us immediately,* stories, articles and pictures which you feel will be of interest.

To those of you in the flood areas, the officers of the National Society of Professional Engineers and the staff of THE AMERICAN ENGINEER, offer our help in any manner possible.—Please call upon us.

Army Engineers on Public Works

Public Works A Major Activity—Force of 10,000 Engineering Employees At Present Engaged on Projects Covering the Entire Nation

By Brig. Gen. GEORGE B. PILLSBURY

The Editor had the privilege of meeting Brigadier General Pillsbury in Washington recently, on Flood Control matters, and found him much interested in the progress of the engineering profession.

THE civil works administered by the Army Engineers form one of the principal construction activities of the Federal Government. Besides the 200 officers assigned to this duty, the Engineer Bureau of the War Department has on its rolls approximately 2,000 civil engineers in the professional grades and including inspectors, instrument men, rodmen, draftsmen and others in the sub-professional grades, a total engineering force of approximately 10,000.

These design and supervise the execution of works employing, at the present time, some 50,000 men on the Government rolls, and in addition supervise contract work affording employment to approximately 30,000 others. The total force engaged on the work now in hand is approximately 86,000 persons.

The work under the Department includes the improvement of our harbors, rivers, and the Great Lakes for navigation, and the execution of Federal works for the control of floods. The activities have been greatly accelerated in recent years for the purpose of affording relief from unemployment. The total expenditures during the fiscal year ending June 30 last amounted to 225 million dollars, and the work during the present year will be on substantially the same scale.

The supervision of the dredging and submarine rock excavation which forms a large part of harbor improvement, is a highly specialized branch of engineering. The special problems to be met when a stake cannot be driven within possibly 5 miles of the site of the excavation may be realized, as also may be the special methods to be employed when the results of the excavation can never be seen, but must be felt for with sounding lead and sweeps. On the other hand, the ability to place a 5,000 horse power excavating machine over the work, with no danger of miring down, renders it possible to do submarine excavation at extremely low cost under favorable conditions. In the 70 years during which the Department has been continuously engaged on harbor improvement, the engineering practice required for its efficient supervision has been highly developed. There is a tradition that many years ago the contractor for the removal of a wreck, finding the work much more difficult than he had anticipated, moved by the dark of the moon the buoy marking its location, and then offered the work for inspection. The site marked by the buoy sweeping clear to the prescribed depth, he received his pay. This cannot happen these days.

The design of locks and dams to convert our great rivers into useful modern carriers of commerce is not so specialized a branch of engineering, but it does entail special applications thereof. Thus the design of the dams now under construction on the sand foundations of the Upper Mississippi River is no small engineering task; and the design of locks to handle without unforeseen disturbance, the momentum of the great volume of water required for filling and emptying them is an art in itself; as is the design of revetments to protect the hundred-foot high underwater mud banks of the lower Mississippi River. The engineers of the department who are successfully meeting these difficult problems merit the highest praise for their professional accomplishments.

Time permits only the briefest of reviews of the river and harbor improvements of this country. Suffice it to say that our harbors have been made second to none in the world. On the Atlantic Coast we have just completed a continuous protected waterway extending inside the coast line from the Delaware to Miami at the southern end of the Florida Peninsula, through which light draft vessels can pass free from the dangers of the open sea. A similar protected waterway is being extended along the Gulf Coast, connecting at New Orleans with the great inland waterway system of the Mississippi and its tributaries. The development of this inland waterway system, into a comprehensive coordinated means for low cost modern barge transportation, from Pittsburgh, Minneapolis, and the wheat fields of the Dakotas to the Gulf, long the hope of the cities on these rivers, is rapidly approaching accomplishment. As a part of this work, the largest earth dam ever undertaken is under construction at Fort Peck, on the headwaters of the Missouri, to provide a great reservoir which will afford adequate flow for navigation. On the Great Lakes the channel and harbor improvements have united the ore deposits on Lake Superior with the coal south of the lakes by a system of low cost transportation which is a vital factor in our national industrial supremacy. On the Columbia River we are constructing a dam and ship lock at Bonneville which will eventually make it possible for ocean shipping to penetrate through the Cascade Range of mountains some 180 miles into the interior of the Northwest. The power from the dam is expected to amortize a large part of its cost.

The works to prevent the inundation of the fertile lowlands of the alluvial valley of the Mississippi, extending through seven states from the confluence of the Ohio to the Gulf, has long been in progress under the Department. The thousand miles of levee along the banks of the river are now virtually complete. The difficult problem of finding acceptable wasteways for excess waters of great floods has finally been solved and approved by Congress.

The great floods in the northeastern portion of the country last spring, which did enormous damage to important centers of population, aroused an insistent demand that the Federal Government lead in the construction of effective flood control work. The Congress authorized a comprehensive flood control program based on the far-reaching surveys that have been carried on by the Department, under Congressional direction, during the past nine years. The execution of this program will afford a wide field of engineering employment.

Prior to the legislative authorization of this program certain selected works have been undertaken with funds

for the relief of unemployment. These include a comprehensive system of 14 reservoirs on the Muskingum, whose watershed embraces a large part of the State of Ohio; and the Tygart Dam on the headwaters of the Monongahela, the first of the comprehensive system of reservoirs designed for the protection of Pittsburgh. The reservoir of the Tygart Dam will conserve flood waters to assure an adequate flow in the Monongahela for the great movement of coal upon which the industries of the Pittsburgh region are dependent. A contract has just been let for the Conchas Dam in New Mexico to afford a great reservoir for flood control and water conservation on the headwaters of the Arkansas; and a contract will soon be advertised for a dam in Mississippi, on the headwaters of the Yazoo River, to alleviate the recurring floods which do great damage to the fertile lowlands on that stream. In the design of these works the Department has insisted upon the employment of the best engineering talent that the country can afford, and is securing structures safe beyond all peradventure.

Those not familiar with the workings of the Department are prone to imagine that because it is a branch of the War Department it is militarized. The highest duty any citizen can fulfill is to prepare himself for service to this country in the emergency of war, and it is indeed gratifying to observe the interest of the engineering profession at large in the need for national preparedness.

You may be assured, however, that the civil works of the Engineer Department in times of peace are carried out wholly on engineering lines and with the firm intention to assure to every engineer on its rolls adequate compensation, merited promotion, and recognition.

Planners and Builders

An Engineer's Reverie Retold In Allegorical Response to the Apathy and Opposition of Those Who Neither Dream Nor Toil

By DAVID B. STEINMAN

Immediate Past President of the American Society of Professional Engineers

(En route to Harrisburg, Pa., September, 1936)

WEARY after a hard day's work, I had a dream. In my dream I saw many men toiling up a steep mountainside. The climb was long and hazardous, beset with hardships, privations and pitfalls. Many of the travelers quit before going very far, most of the others perished during their upward struggle, and but few ever reached the top.

These toilers on the mountainside belonged to an ancient and honorable calling, that of "Planners and Builders." But despite their common interest as fellow craftsmen, they struggled separately and apart, each man endeavoring to cut his own trail. The governing code was "every man for himself—the devil take the hindmost!"

Adding to the difficulties of the struggle, there were many outlaws and pretenders. These, posing as members of the craft, preyed upon the travelers, purloined their scant provisions, effaced the trails they had marked, blocked their upward progress, and discredited them with those who might help.

Here and there, groups of the travelers were persuaded to join various private guilds. There were scores of these guilds, each selling a different craft emblem. But these guilds did nothing toward blazing the trail or facilitating the ascent. Instead they spent their time in circulating papers covered with cabalistic symbols, and in paying ceremonial honors to the rare few who, after years of climbing, had reached the top or to those veterans who had one foot in the grave. These guilds were busy fashioning tombstones rather than stepping stones. Moreover they admitted outlaws and impostors as well as true members of the craft, glad to accept the guild tax from the pretenders in return for the privilege of falsely displaying the craft emblem.

At the foot of the mountain stood "barkers" who were maintained by equipment purveyors and who were aided and abetted by the guilds. Those "barkers" lured youthful wayfarers to undertake the ascent by shouting the glories of the summit view without revealing the heartbreaking, lifelong climb that lay beyond the turn of the road. Thousands of youths, unfitted and inadequately equipped for the ordeal, were persuaded to join the desperate climbers on the mountain slopes. These added hordes choked the narrow rocky passes, depleted the dwindling supplies, and aggravated the hardships and the futility of the struggle.

A group of the travelers, pausing at a resting place in their arduous ascent, took counsel together. "What can we do to make this climb smoother and less perilous?" they asked. "We must stop this waste of lives and of strength. We must do this not only for ourselves but for all our fellow craftsmen and for the youths who follow us on this trail." They set about to study the problem—to get the facts, and to draw the logical conclusions. And this is what they reported to their fellow craftsmen:

"On the other slopes of this mountain, members of other callings are ascending—and they are reaching the top with ease. There are the "Healers," the "Counsellors," and other honored and recognized groups of journeymen. They had previously encountered the same difficulties and obstacles as we are facing, but now they are spared our perils and privations. Instead of treacherous, uncertain, unmarked trails, they have smooth highways leading safely to the summit—one highway allocated to each calling. Instead of every man trying to hew a separate trail for himself, the members of each craft have united their strength and have built a highway up the mountain slope. They have planned and built these highways themselves. Before commencing construction, they had to go before the "Council of Lawmakers" to secure authorization and the right-of-way. But the Council was glad to grant these charters, and is providing a police force to patrol these highways and to keep out the outlaws and the pretenders.

The journeymen of these other crafts do not have to spend a lifetime in the desperate struggle to scale the mountain. They are spared the numerous casualties. They reach the top in large numbers, before they are too old or too exhausted to enjoy the summit-view. Let us do what these other crafts have done. Let all of us unite, secure a charter, and build a highway for the members of our calling to reach the top!"

And, joining their strength in united purpose, they proceeded to work on this enterprise for the common good. But, obstructing and discouraging the efforts of the builders, there were many doubters and scoffers standing in the way.

"You cannot solve a problem by passing a law," said these objectors. "We are not depending upon the passing of a law to solve our problem," was the reply. "We are solving our problem by building a highway up the mountainside—a safe, clearly defined, protected highway for all truly qualified members of our calling. The securing of the necessary Charter from the Council of Law Makers is only the first step in our enterprise. This Charter gives us the right-of-way, and places the authority, force and sanction of the Law behind the efforts and the aspirations of our Profession. It enables us to cope with the outlaws and pretenders who otherwise would block our progress. It enables us to provide that none shall start upon this climb who are not properly equipped. The Charter gives us the legal authority, but the real work of building the highway is up to us."

The scoffers continued their attack, and the guild leaders joined them. "A Profession cannot lift itself by legislative bootstraps," they shouted. "We are not depending upon legislative bootstraps to lift us," was the reply. "We are building this highway with our own efforts, and every man who climbs this highway will have to do so on his own energy. The guard rails and the bridges will make the climb safer. The hazards and the heartbreak will be eliminated. The wasted energy and the wasted lives will be saved. But fences and guard rails are not bootstraps. And the building of a highway is more than mere legislation. It is true that we cannot build the highway without the Charter, but that does not make the Charter or the highway a legislative bootstrap." And the workers continued in their task of carving a highway in the mountainside.

The scoffers and the false leaders still held back, refusing to lend a hand. "How do we know that a highway can be built?" they asked. "How do we know that it will be useful in helping men to reach the top?"

In reply, the workers cited the successful precedents of the other Professions, which had already built their highways up the mountain slopes thereby enabling their qualified members to reach the summit with comparative ease.

"But," rejoined the scoffers,—"our problems are different. Just because the other Professions have built highways to the top does not prove that we can do it. They are accustomed to these things. It is easy for Counsellors' and 'Healers' but we are only—"

"Yes," interposed the workers. *"We are only Planners and Builders!"*

And the workers, with Registration Laws as their Charter, continued their work of planning and building the highroad of Professional Recognition for the Engineering Profession.

Objectives

The Connecticut Society of Professional Engineers, Inc.

A Professional Unity of all Classifications of engineers, conjoined in active endeavor toward the following objectives:

1. An elevated status for the professional engineer with deserved public prestige and political recognition for the profession.
2. Improvement in modes of engaging engineering services.
3. Limitation of the designation "Engineer" to those rightfully entitled to use it and prevention of the performance of engineering duties by other than qualified engineers, in either public or private work.
4. Assistance of engineers in need.
5. The election of engineers to public office.
6. Promotion of participation of professional engineers in matters of national, state, and local importance and cooperation with national, state, and local government, officers, commissions, associations, societies, clubs or other groups with the purpose of public service to their country and its citizenry.
7. Political inclusion of the professional engineer in planning, development and operation of public projects and national, state and civic engineering works, and in the preparation of legislation pertaining thereto.
8. Better selective methods of admission of students to engineering schools and the elevation of both entrance and graduation requirements.
9. Supplementing the functions of educational, technical, and social engineering groups, societies, associations, or clubs by public, political, legal, welfare, employment and similar activities designed to raise the economic status of the profession.
10. Full cooperation with all engineering groups and individuals toward professional unity and solidarity throughout the entire profession, regardless of specialty or classification.
11. Uniform and reciprocal improved state registration laws for professional engineers.
12. Legislation on behalf of the Profession and organized opposition to any legislative actions tending to deprive the engineer of any of his professional rights.

Tolerance and Progress

Keynotes of speech by Col. Simpson at recent N. S. P. E. Convention

"In the past our jobs have not depended to any degree on whether or not the great masses understood what we were doing and why. This situation is changing and we must be prepared to meet it."

By Col. WALTER L. SIMPSON

Treasurer, American Society of Professional Engineers

MOST engineers in their professional pursuits have been called upon at one time or another to organize some particular activity having to do with engineering or construction or one of the allied branches. However, it has been the observation of the writer during the last few years, that engineers as a whole have very little idea of the organization of forces that have to do with social developments; that is to say, with things concerning the general welfare of the public at large. Society as a whole is not interested in the organization of construction jobs; it is not interested in whether jobs are properly organized as to source of supply, sources of labor, or as to ethics, but only in the finished product, and particularly if that finished product is a contribution to the betterment of humanity. That is a point that we as engineers have often missed.

It was my privilege during the past three or four years to have been associated with some of the New Deal agencies, involved in social movements. At one time, I had a large staff of engineers and technical people including a number of social workers. At first, I could not see what the social worker would have to do with a program that was largely concerned with construction work; but, as the administrator of the organization, it was necessary for me to see the program in its entirety and with a perspective, and as I watched that organization develop, and as I became more and more conscious of its various phases, I realized that the social service department was making a considerable contribution to the effectiveness of the program and that the two services—social service and engineering—had to be correlated if we were going to accomplish our objectives. One of the greatest problems then, was to convince the engineers on the staff that they must accept the social workers as co-workers. In order to do this, I had to become more conversant with the social workers' problems, and I began to inquire into the realm of professional social work, using every opportunity that was available. I recommend that other engineers do likewise if they have a chance.

From that experience, I changed my mind considerably about this field and the part that engineers might play in a "welfare" program, as well as about the contribution that the social worker might make in our field. Many engineers throughout the country have been exposed to similar experiences during the past few years, but how much they have absorbed and to what degree their viewpoint has been changed, depends entirely upon the individual. My thought is, that both professions are very necessary to the well-being of society; that they may complement one another in certain types of problems, but that in all instances, we should be tolerant of all professions, for they each have something to contribute. As engineers, we might well profit by the social worker's training and enforced experience in meeting the public. In order to carry on their program, they have had to develop an ability to interpret their work and their philosophy to the lay public; they have had to carry on an educational program as part of their regular job, in order to survive. Most of us have had no such training and have ignored the necessity of interpreting engineering as a profession to the public. In the past, our jobs have not depended to any degree on whether or not the great masses understood what we were doing and why. This situation is changing and we must be prepared to meet it.

The average engineer is a somewhat timid person outside of his own realm. He can go out on a construction job, speak the simple language and get results with his crews. Take him off the job and put him in a group, even of brother engineers, and he becomes a quiet, retiring individual with little or nothing to say. Only by individual determination and concerted action will this trait be changed and it is essential that it should be changed if we are to meet changing conditions. Since we are not a technical organization, such as the Founders' Societies, but an organization having to do primarily with the improvement of the engineers' contact with society, this is a logical channel through which we can approach these problems. We must realize that our future as engineers depends more than most of us suspect or admit, upon our becoming more articulate and more socially minded. The old days of big construction work where the engineer and the contractor were isolated, and were powers unto themselves, have disappeared. We have to depend upon public opinion and local authorities more and more. Let us follow the lines of military strategy and fight an offensive battle. At the present time we are in a defensive position, and one of the first rules of the military game is that one never remains in a defensive position any longer than is required to change to the offensive.

The fact that, heretofore, the engineer has been an individualist is part of this same problem. We hear that doctors are individualists, but with him, as with many other professions, it is rather a state of mind than an actuality. Through his daily contacts in hospitals, clinics, his very office suite and building, he is thrown with other doctors who are interested in the same general problems and with whom he exchanges ideas and thoughts. The engineer is apt to be isolated and soon may reach the place where he is an introvert. He resents questions and suggestions, even from his superiors, and certainly from those outside the profession. He is unwilling to stop and discuss or explain situations. When Mr. Average Citizen thinks that we are making mistakes and not doing the right thing, we should try to educate him to our point of view. He is the tax payer and part of our constituency and upon him, depends to a large degree, our future.

Another point of attack in our offensive battle is the engineer's participation is civic movements. Many of us do not like to speak in public and rather than make the effort to express ourselves, we allow men from other professions or non-professional men to control civic situa-

tions where engineering problems are of primary concern. We cannot criticize the results in such cases if we knowingly permit them to develop without protesting. The engineer must make himself heard and felt in public service. The community as a whole must be conscious of the contribution that he is capable of making toward better living conditions.

Our own meetings, local chapter and state, can be a starting point,—a training field, as it were,—where members should be required to make both written and verbal reports. Too many engineers are unable to express themselves clearly even in a written report, but actually a little practice will improve the worst of us. We do have something to say and we must be able to present our material so that it is interesting and intelligible to an audience, other than one of engineers. However, we can begin on each other through our meetings.

So much for our professional contact with the public. The next point may seem rather personal, but it is too important to omit in this discussion of our status in relation to society as a whole, and our individual communities in particular. Many engineers have a horror and a fear of social events requiring formal dress. Boots, corduroy trousers, khaki shirts are such an integral part of our life that when we are faced with the necessity of an entirely different outfit, we usually find an excuse for not accepting the invitation. This explains why many people think of engineers as "rough necks," and while we may not care what the public thinks, yet social functions, formal or informal, afford another opportunity for us to establish ourselves professionally. It is another contact with the lay public and other professions, that we must not ignore.

Now, about our own organization. If we are going to accomplish results and make ourselves felt, there must be a solidarity of purpose within the organization. If every engineer in the United States who is eligible for membership, belonged to the NSPE, it would still represent only a minute part of the entire population. But, minority groups can be powerful. We learned that from the New Deal Administration. Concerted effort and pressure will bring about results. As an example of what I mean, I cite the instance of the concerted action of the veterans' groups, who when they joined forces and forgot petty differences, finally succeeded in securing the payment of the bonus, even over Presidential veto. In addition, there is the successful experience of the labor groups in relation to the wage scales of the relief program. We should benefit by these examples and realize that if we work together, we can accomplish many things that we feel are desirable. It is surprising, too, what one lone individual can do, if he is sufficiently determined. The reason that the District of Columbia does not have registration laws is due entirely to the effort of one man.

In order to have the solidarity of purpose which is so essential to our organization, we must keep petty jealousies and differences at a minimum and not inject them into the society and society meetings. In an organization such as ours, we are sure to have controversies and differences of opinion, particularly during this formative period, but let us discuss these frankly and thoroughly and try to reach an understanding and agreement before they become a serious issue, and before we build up opinions and prejudices that will do us more harm than good. Let us remember that we are not a technical society, but a group interested in humanity as a whole, in things of civic interest; and let us keep our original purpose before us and eliminate technical discussions from our meetings. The Founders' Societies offer sufficient opportunity for the technical side of our profession.

The matter of dues should receive some consideration. Too many engineers stumble over this question, but after all, in comparison with our earning capacity, or the amount that consulting engineers, for instance, would pay for advertising, it is very little. Again, even though it may seem like a sizeable sum to an individual at the time, one should consider the amount of benefit that he will receive, and answer the question, as to whether or not his future as an engineer, and the future of the profession are not worth the money and effort he will put forth in the society.

Another need of the organization is publicity. Not publicity for the engineer as an individual, but the kind of publicity that shows what we are doing to make the world a better place in which to live, in language that the lay public can understand and will read. Newspapers are not only looking for news but will gladly help you make news if you will permit them. Every one needs publicity and most people have money to spend in securing it, but we have no funds for this purpose and therefore, must use other methods. Each chapter should have a publicity committee that actually functions, and this in addition to national committee would be, at least, a first step toward meeting the situation.

Our organization must depend almost entirely for its executive functions on its national executive secretary. As you all know we are handicapped by lack of funds and we do not have the office force that we actually need. However, the work of the secretary's office can be greatly reduced if the chapters and states will handle their part of the load according to the original plan. States have autonomy and yet idividual state members write our national secretary regarding matters that should be settled within the chapter or state. While the office is courteous and accommodating, yet this requires time and effort that should be used otherwise. Let us be a little more considerate of the national secretary's office and relieve him of as much detail as possible.

With one last thought, I shall finish, that is—membership. Many of you say that you cannot get new members. I wonder how many of you have really tried. You all come from some college or university. Have you tried to interest old classmates whom you knew personally during your college days? Have you contacted your alumni association? You have something in common with these men whom you knew in school and here is a chance to get in touch with them again. If we can get the membership, there is no reason why we can't go places!

Flood Postpones Annual Meeting

Due to flood conditions the annual meeting of the Kentucky Society of Professional Engineers which was to have been held in Louisville, Ky., January 29 and 30, has been indefinitely postponed. The meeting will be held at a later date, and a letter will be sent out in plenty of time so that the proper arrangements for attending can be made.

Officers Elected In District of Columbia

New officers elected for 1937 in the District of Columbia Society of Professional Engineers are as follows:

President—Col. Walter L. Simpson.
Vice-President—George E. Gyer.
Secretary—George H. Cleary.
Treasurer—Milton Kelbert.
Directors—Lewis Mulhausen, Walter Swanton, Joseph Barnett, O. B. Lane, Virgil Wagner, W. L. Bach, J. V. Dunham and J. Gholsten.

How Science and Invention are Presented the Popular Way

By **HENRY BUTLER ALLEN**

Secretary and Director, The Franklin Institute, Philadelphia, Pa.

PHILADELPHIA has again taken its place in the foremost ranks of education in the opening of the Benjamin Franklin Memorial and The Franklin Institute on the Parkway, for as an important part of this building there has been incorporated a technological and industrial museum. With the scientific background of the Franklin Institute to give it stimulus, this new venture bids fair to rival its sister institutions in Munich and London.

The general tone of the museum is scientific. Industry, however, has not been slow to realize the value of such an institution. It is, therefore, most gratifying to have the large corporations co-operate with officials at the Institute in placing before the public the industrial application of some little known scientific principle.

Here one may come to see how automobile tires are made, how the inside of an auto engine looks, what the airplane companies are planning in the way of comfortable overnight travel, how paper is made, how to use the voting machine, and literally thousands of other exhibits which tell to the public the story of science and its application to our everyday life.

In this new "Wonderland of Science," you "push a button" and see it work; you play with cash registers; you turn in fire alarms and then look furtively around for a policeman; you do all sorts of things which have become imbedded in your nature from childhood and which have never had the proper outlet.

But not only through its museum does The Franklin Institute keep in touch with industry. Its lecture hall is frequently used by commercial interests to present to the public some new development which they wish to have appraised first for its scientific value. This can best be done through some independent medium, such as a scientific society which has proven through the years that its interest in laboratory development is purely scientific.

Again, the Institute, by its award of medals, encourages research in the industrial as well as the scientific laboratories. But perhaps the most important of all, so far as the general public is concerned, is its great technological and industrial museum mentioned above.

Industry has a treasure house in The Franklin Institute.

In this institution may be found exhibits depicting every form of modern refrigeration.....for the home and for the huge office buildings. The air conditioning plant of the building itself is an exhibit. Here may be seen all the machinery which keeps the elevators running, and on the ground floor is exhibited the small elevator which is installed in private homes. Perhaps someone is interested in the latest method of automatic coal furnaces. A model is installed in the basement so that the public may judge for themselves whether they would like to have this form of heating.

Pay a visit to the lighting section. Here in a suite of rooms is given the history of illumination of houses from 1620 down to the present time. A visit to the Institute will acquaint every one with the new indirect lighting systems which oculists recommend and which

The Benjamin Franklin Memorial and the Franklin Institute, Philadelphia, Pa.

architects delight in planning. The influence of our present day artificial light on fabrics is a fascinating study and one which will increase anyone's knowledge of light and color.

There is another section to which three floors have been devoted.....graphic arts. Here one may learn from its inception the history of writing and the art of printing. No other one discovery has so influenced civilization. But today, when the newspapers bring us daily happenings practically as soon as they occur, we are apt to take this phase of life as one of routine. Few stop to consider how dull existence would become if once the press ceased to be. Because printing is so much a part of us, this great industry is mapped out in the Institute so that even the most disinterested must stop for a moment and be impressed with the paper-making machine, or marvel at the simple colonial print shop such as Franklin probably used to send forth his inexhaustible fund of knowledge.

In the Hall of Communications the telephone, the telegraph, the radio, will set your head in a whirl, but competent guides will explain these marvels of science, these handmaidens of business. You have become so accustomed to them that you regard them as part of the furnishings of your office or your home, yet they have all either been introduced into our culture or practically developed within the lifetime of the successful business man of today.

Visit the chemistry section and learn how man has wrested from nature secrets which have added much to the comfort of daily life. A salt mine is uncovered and the story of salt and its by-products is told to you in a twelve minute talk which surprises you in its category of facts which are illustrated one by one by means of a lighted panorama which holds your attention and fastens the tale in your mind as no amount of reading could ever do. The history of rubber is unfolded and brought home to you by pointing out that automobile travel could never have attained its popularity without the tires made possible by this remarkable discovery.

So interesting and so important has the science of chemistry become in our every-day life. The Franklin Institute has brought together a series of demonstrations which they have named the "Traveling Chemistry Show," and which they are sending out to travel from place to place. This show will be given before schools and colleges, clubs and other organizations. It will bring directly to the people the type of co-operation which The Franklin Institute lends to education and industry. This show is the first of a series of Scientific Wonders, which are being developed by the staff of the Institute. It is planned to have at least one set of scientific demonstrations traveling about the country at all times. It has been proven by attendance that the public as a whole is deeply interested in knowing what goes on in scientific laboratories, the results of which have such an intimate influence on its life.

Faithful to the traditions of the man in whose honor this Institute was founded, The Franklin Institute is trying to bring into the lives of all men a fuller comprehension of the wonders of science. Benjamin Franklin delighted to take a theory, find the means of putting it to practical test, and prove whether it was workable. Not content with his own and other men's discoveries as a measure of accomplishment, he was untiring in his efforts to gather the whole field of human knowledge into a common pool, from which he who would might draw his share.

An interesting point is that Franklin himself carried out the same scheme to acquaint people with what science was doing. In 1750 he equipped a neighbor with apparatus for electrical experiments and sent him out through the colonies giving demonstrations.

By continuing this practice the Institute is trying to place at the service of the plain man all the discoveries of

Miss Irene Rich tries her skill on one of the machines at the Franklin Institute.

Mr. Fred Stone opens the "Rubber Exhibit" at the Franklin Institute.

modern science. It is trying to make available in the simplest form the explanation of scientific fundamentals and their applications.

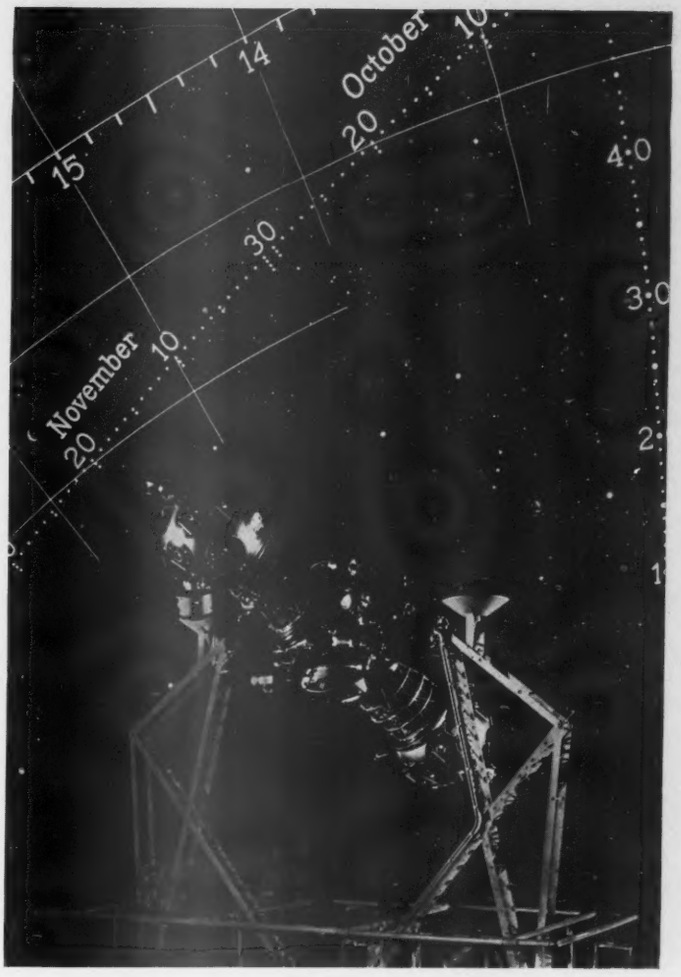
Faithful to its mission of carrying education to those who desire it, The Franklin Institute has decided to overcome the limitations of its fixed location by making some of its exhibits mobile and carrying them to those people who experience difficulty in paying frequent visits to the Museum of the Institute.

The new building of The Franklin Institute has what is probably the world's greatest equipment for the teaching of astronomy. Here grouped together is first of all the great Fels Planetarium, made by the Zeiss Company of Germany and presented to the Institute for the enjoyment of the public by Samuel S. Fels, well known in the industrial world. This is the most successful device for the teaching of astronomy that has yet been developed. It shows in an amazingly beautiful fashion the motion of the sun and the planets and displays the constellations made up of some nine thousand stars. Its beauty can be appreciated only by a view of its wonders. It presents with breath-taking reality the heavens as seen on a very clear night. It can be made to portray the milky way, the inclination of the planetary orbits to the earth's orbit, the sky as it was at the time of the birth of Christ and as it was visible to Byrd at the south pole. This past Christmas, in addition to the scientific version of the first Christmas, a symbolic presentation of this enthralling story was given. By the aid of unusual lighting and lovely music, some startling effects were obtained. For three weeks it was necessary to give extra showings of this unique portrayal of this ever appealing theme. This year the story of Christmas will again be told scientifically for the skeptics and reverently and inspiringly for all those for whom it will ever hold wonder and comfort and peace.

In addition to the planetarium, two telescopes have been mounted in the astronomical observatory on the roof of the building. One of these is a twenty-four inch reflector and the other a ten-inch refractor. On every clear night they are available for the enjoyment and instruction of the public. There has also been opened an "amateur astronomers" section, where people may grind their own lenses and polish their own mirrors—this work, of course, is accomplished by aid from members of the astronomical staff.

Another section of this "Wonderland" is devoted to aviation. As one enters the room, the first thing that is seen is the beautiful little red plane in which Miss Amelia Earhart made the first solo flight to Europe ever made by a woman. Here too we have a very early 'Wright" plane. It was owned originally by Grover Bergdoll and apparently had been stored by him. When it came to light again, permission was sought and obtained to recondition it and present it to the Institute. This was done and the plane was installed in the building with due ceremony, after it had been flown for about four minutes, at the height of approximately five hundred feet! To ease the yearning in the heart of every boy, there is also a plane into which one may climb. Here, seated at the controls, the plane may be operated just as it is by any pilot. It is worth a visit to this section just to see the look on the faces of the small boys after they have had such an opportunity.

In the physics section, in the field of electrical communications, the development of the radio from the days of Dr. Heinrich Hertz, the originator of wireless telegraphy, to the present day, is shown in a way which anyone can understand. All the fundamental principles are



In the Fels Planetarium

illustrated. Classes from practically all of the neighboring colleges and schools are brought to the Institute and graphically taught what has been expounded in theory from the text books.

The mystery is taken out of science and it is shown to be not magic but common sense and the result of the orderly working of the human mind.

All of the fields of engineering are illustrated by masterpieces—the Watt engine, the Newcomen engine, examples of the various forms of prime movers; the automobile is shown in historical sequence; the bicycle; other forms of transportation, both land and marine.

For one hundred and twelve years The Franklin Institute has carried on its scientific activities and has remained faithful to the purposes for which it was founded —the promotion of the mechanic arts and the dissemination of scientific knowledge. It has a fine scientific library and is the depository of patent literature from the United States and many foreign countries.

It has a scientific journal which is international in character and which has proven many times to be the messenger which brings to the world news of some new discovery.

It has a Committee on Science and the Arts, which has held its meetings for over one hundred years and which fulfils a need which was felt by the founders of this society—and which is felt today—the need for some competent, trustworthy and impartial body to which inventors and discoverers may appeal for advice and on whose judgment they may confidently rely for an opinion as to the

usefulness of their inventions and discoveries. It is this committee which each year recommends the award of the nine medals given by The Franklin Institute. The best known is probably the Franklin Medal, the highest award for achievement in physical science in the United States. Each year two are given, usually one to an American and one to a distinguished foreigner, for a life-time of effort in the physical sciences. These medals are bestowed on what is known as Medal Day. It is celebrated in May and brings together a noteworthy company of savants and men of affairs in our industrial and diplomatic life.

The Institute has weekly meetings through the winter months, at which time those who are leaders in the fields of science, industry and other fields of knowledge appear and expound the latest findings of devoted research workers in laboratories, or explain the newest application of age-old theories.

As a means of promoting the mechanic arts, the Institute for many years held exhibitions. These huge fairs were the means of bringing to the attention of the public the latest applications of science to industry. They were always largely attended and the manufacturers were encouraged to display their wares by awards which were given by The Franklin Institute. (The first ice cream soda ever made was served at such an exhibit in 1874 by a manufacturer of soda machines—Green Company.) In 1884 the Institute was responsible for the great International Electrical Exhibit, the first of its kind in the world. As an outgrowth of this exhibit the Bureau of Standards came into being in Washington.

In pure research the Institute has one of the best equipped and best known smaller laboratories in the country. It is called the Bartol Research Foundation and was established by the bequest of one of its members, Henry W. Bartol, "For the maintenance of research in the physical sciences, especially in electricity and in problems of a scientific character growing out of industry." The instruments used to measure the stratosphere were developed in our laboratories.

From the founding of this Society by two young men, The Franklin Institute has striven always to serve the purposes of youth. To this end it conducted schools for ninety-nine years. The excellence of the training given is evidenced by the success of the many hundreds of young men who benefited by them. (The architect who rebuilt the capitol in Washington and added the dome received his early training in The Franklin Institute.) It was because of these schools that the Institute in 1907 was named by the City of Philadelphia, as beneficiary under the will of Benjamin Franklin, to receive a sum of money which had accumulated from a bequest by Franklin to the City of Philadelphia. He left a certain sum to this city of his adoption, and likewise to Boston, which was to be invested for one hundred years. It was to be regarded as a loan fund for the use of young married artificers. At the end of the specified period, a portion of the money was to be given to some worthy organization to be designated by the City Fathers. The Institute was named by the City and received something like a hundred and thirty thousand dollars, to be used toward a building fund.

The Franklin Institute's first home was built on South Seventh Street in 1824. In 1832 it was felt that the building was too small and that larger quarters would have to be procured. Through a century the building was used, a new one was thought of, plans were prepared and funds raised from time to time, but it was not until 1932 that the new building began to take definite shape upon the Parkway in Philadelphia.

The Engineer

Who is the man designs our pumps with judgment, skill and care?
Who is the man that builds them and keeps them in repair?
Who has to shut them down because the valve seats disappear?
The bearing-wearing, gearing-tearing Mechanical Engineer!

Who makes his juice for half a cent and wants to charge a dime?
Who, when we've signed the contract, can't deliver half the time?
Who thinks a loss of twenty-six per cent is nothing queer?
The volt-inducing, load-reducing Electrical Engineer!

Who is it takes a transit out to find a sewer to tap?
Who then with care extreme locates the junction on the map?
Who is it goes to dig it up and finds it nowhere near?
The mud-bespattered, torn and tattered Civil Engineer!

Who thinks without his products we would all be in the lurch?
Who has a heathen idol which he designates Research?
Who tints the creeks, perfumes the air and makes the landscape drear?
The stink-evolving, grass-dissolving Chemical Engineer!

Who is the man who'll draw a plan for everything you desire?
From a trans-Atlantic liner to a hairpin made of wire?
With "ifs" and "ands," "howe'rs" and "buts," who makes his meaning clear?
The work-disdaining, fee-retaining Consulting Engineer!

Who builds a road for fifty years that disappears in two?
Then changes his identity so no one's left to sue?
Who covers all the traveled roads with filthy, oily smear?
The bump-providing, rough-on-riding Highway Engineer!

Who takes the pleasure out of life and makes existence hell?
Who'll fire a real good looking one because she can not spell?
Who substitutes a dictaphone for coral-tinted ear?
The penny-chasing, dollar-wasting Efficiency Engineer!

NEWS OF STATE SOCIETIES

NEW YORK

Westchester County Chapter Activities

Committee in charge of annual dinner will present a report for consideration, calling for dinner at the Elks Club, White Plains, the first Monday in February. Members of the Committee include, among others, Joe Brady, J. R. Rundell, D. B. Metcalf, Jim Duffy and John Avery.

A large attendance of over 200 were present at the Westchester County Control survey meeting held November 19th.

The water supply question is again coming to the foreground. The committee will have a report at this meeting.

Due to unavoidable complications, the "Whiskey Meeting" has been deferred until later. At the meeting of the State Board of Directors, the resolution from this Chapter in reference to the American Engineer was laid on the table, *AND HOW!* More later. *(Note from new Editor—Let's have it —we can take it—we realize Westchester County's importance in scheme of the Society's past)*

A detailed report of the State Board meeting will be presented by John Avery at the meeting.

Some Vital Statistics:

Chapter	*No. Members*	*% Dues Collected*	*New Members*	*Non-Members in County*
New York ..	243	89	41	2400
Bronx	192	71	30	500
Kings	188	83	33	1100
Albany	133	76	9	180
Westchester .	122	72	10	730
Queens	102	70	20	720

Mr. Benline points out that 600 golf courses are to be built by the Government, and believes there is still room for another course in Westchester County.

Proposed amendment to Real Property Law will be discussed.

Included with this issue is the official list of members in good standing.

An announcement of interest in reference to the Westchester School of Current Affairs will be made at the meeting.

Among the members who are making personal contacts with new members are Messrs. Hartman, Rundell, K. C. Browne, Jim Duffy, John Avery, H. Brigham, Collins and several others.

CHAS. H. SELLS,
President.

Send in Your News Items for a Better MAGAZINE

PENNSYLVANIA

Dec. 17, 1936.

Bureau of the Census,
Washington, D. C.
Gentlemen:—

Professional Engineers are legally defined as such by appropriate Registration Laws in numerous States and the National Society of Professional Engineers through its member State Societies is sponsoring legislation making such legal registration universal in the whole country.

We ask the Bureau of the Census, in laying out its program for the next decennial census in 1940 to provide for the securing of data showing the number of engineers legally registered in addition to the total number of engineers engaged in the various branches of engineering.

It is suggested that in mapping out this program they avail themselves of the assistance and advice of the National Society of Professional Engineers, 1033 National Press Building, Washington, D. C.

Cordially,
T. W. Battin,
Executive Secretary,
921 Widener Bldg., Philadelphia, Pa.

Death of Philadelphia Chapter President

It is with deep regret we have to announce the passing of Engineer Ralph Mellor, President of Philadelphia Chapter, Pennsylvania Society of Professional Engineers, who died December the Fifteenth and whose funeral occurred today being attended by several members of the Chapter.

His office is filled automatically by Vice President J. Edgar Hires, and the vacancy occurring in the Vice-Presidency will be filled by selection by the Board of Direction (Const. Art. IX, Section 8.)

Co-ordinate Systems Are Proposed

The Pennsylvania State Planning Board is suggesting to the people of our State two acts to be made into law by the General Assembly.

The first act is entitled, "An act to establish and legalize a system of boundary and survey station descriptions. Be it enacted by the General Assembly of the Commonwealth of Pennsylvania." The second is entitled, "An act to permit the entry of engineers and surveyors and their representatives onto private property for the purpose of using survey stations established by and under the direction of the United States Coast and Geodetic Survey and providing a penalty for injuring, defacing and destruction of marks and monuments. Be it enacted by the Senate and House of Representatives of the Commonwealth of Pennsylvania in General Assembly met and it is hereby enacted by the authority of the same."

The Pittsburgh Chapter Pennsylvania Society of Professional Engineers having in mind the general dissemination of information concerning these proposed laws among engineers generally and also the public arranged a series of talks explaining the acts themselves, also the results which may develop from their passage into law.

The first of these talks was held December 17, 1936 in the Fort Pitt Hotel at the regular meeting of the Pittsburgh Chapter of the Pennsylvania Society of Engineers.

The present members of the Pennsylvania State Planning Board are Ralph M. Bashore, Chairman; Warren Van Dyke; Henry Hornbostle; J. Hale Steinman; and Karl de Schweinitz, members.

Acts similar to the ones proposed in Pennsylvania have been passed in New Jersey and by signature of the Governor became laws on March 25, 1935.

UTAH

From News-Letter of Utah Society

A pin for the Members of the Utah Society of Professional Engineers has been adopted and is now available for distribution. It is made from Utah silver in the shape of the State, with the inscription Utah Society of Professional Engineers. Your pin will be delivered to you by your Secretary upon receipt of $1.00. If you care to have your name engraved on the back of it this will be done for you at an additional cost of 25 cents.

—o—

Engineers are said to have an institutional mind which has its power of perception (investigation, research) of memory (records), of reasoning (analysis) and of design (planning). "Such an institutional mind is a composite of, and yet is distinct from, the minds of the individuals of which it is composed. It has a continuing life coincident with the life of enterprise and can think and arrange affairs with that large perspective made possible only by such characteristics."

—o—

The administration of the area surrounding Boulder Dam and Lake Mead will be turned over to the National Park Service. This service will construct roads and trails, control Boulder City Airport and operate sightseeing airplanes and boats.

—o—

Topographic mapping parties of the United States Geological Survey that have been working in Utah, Wyoming and Colorado on Steam Utilization Surveys during the past summer are now closing up the work for the season. Plans contemplate resumption of work again next spring.

—o—

The Pine View dam on Ogden River near Huntsville is now practically completed according to announcement by the Bureau of Reclamation. The present prospects are bright for the farmers under the project to have use of storage water from the floods of Ogden River next summer.

—o—

The Federal Board of Maps and Surveys is preparing a program to present to our next Congress, for completing the topographic mapping of the United States. At

present, Utah is more than 27% unmapped or inadequately mapped.

The San Francisco-Oakland Bay Bridge is opened and in use. Total length 43,500 feet; materials used—Structural Steel 152,000 tons; Cable wire 18,000 tons; Reinforcing Steel 17,000 tons; Concrete 1,000,000 cu. yards; Cement 1,300,000 barrels; Timber 30,000 M ft. b. m.; Paint 200.000 gallons; Man hours of work 54,850,000; Cost $76,000,000.

—o—

Nicholas Hunter Heck, Chief of the Division of Terrestrial Magnetism and Seismology, U. S. Coast and Geodetic Survey, is author of a new book on "Earthquakes" just announced by the Princeton University Press. A summary at the end gives just the facts that everyone wants to know. For instance, it may surprise you to learn that earthquakes occur on the average of one or two every hour, that widely recorded disturbances occur about once every 16 hours, and that major earthquakes occur about once a week.

—o—

Dr. Nicholas Murray Butler, President of Columbia University, predicts that the key man to whom society will turn for the next century or two for solution of the gravest problems the world has faced in 2000 years will be the engineer, broadly trained in the social as well as technical sciences. He declares that "Lawyers can do nothing for us now. All other careers are partial and special and it is to the engineer we must look for guidance." The great problems set out by Dr. Butler are those of public health, the scientific supply of food through the proper use of the soil, soil erosion and provisions of standards of living as well as leisure.

—o—

It has been figured that tourist trade at Niagara Falls is a larger financial item than the full power resource of the Falls.

—o—

Connecticut is the first State to issue life time automobile plates, effective March 1, 1937. The tags will be made of aluminum and there will be a "cut-out" so that the year may be inserted every March.

—o—

Recently the Department of Industries, at Bombay, India, discovered a high-quality bauxite deposite within 30 miles of Bombay. The deposit is about 2000 feet above sea level, 6 miles from a navigable creek which leads to the Arabian Sea, affording cheap water transportation, and is within 60 to 100 miles of a group of hydro-electric power stations. This combination of conditions justifies the erection of an aluminum plant and one of 3000 tons of aluminum per year is proposed to supply India's consumption.

—o—

Until recently each person in Germany has been permitted to retain 200 marks of his gold holdings acquired prior to October 3, 1931. A new decree, however, required all persons in possession of foreign and old gold coins, as well as all pure gold and gold alloys to offer such holdings to the Reichbank not later than November 30, 1936, and to transfer title thereto to the Reichbank when requested. Gold in jewelry and dental work is allowed to remain in private possession.

—o—

A large alunite deposit is now reported in Mexico, about 15 miles west of Comefort. Analysis shows moisture 13.04%; insoluble 54.42%; alumina 18.45%; ferric oxide 1.11%; potassium oxide 4.57%; sulphuric anhydride 8.46%.

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To improve the fishing in Loch Levan Lakes, high in the Sierras near Cisco, California, the Cisco Sports Club is using dynamite to clear the lakes of predatory fish preparatory to stocking the lakes with trout and other game fish.

—o—

A few of the outstanding engineering achievements for 1936 are:

(1) Boulder Dam and power plant completion.

(2) The $77,000,000 bridge over San Francisco bay.

(3) The giant Triborough Bridge in New York over the East and Harlem rivers. (17½ miles).

(4) The longest tunnel of its bore in the world (18 miles long and 16 feet diameter) at Indio, California. Part of the Metropolitan Water aquaduct from the Colorado River.

(5) Direct trans-Atlantic telephone service between United States and France.

(6) Cotton roads, wherein cotton sheeting acts as the binder between the base and top surface, came into use and more than 500 miles of such highway were constructed during the year.

(7) A turbine generator built by General Electric Co. for the Appalachian Electric Power Co. uses hydrogen as the cooling medium and operates at a steam pressure of 1250 pounds.

(8) Installation of the new coaxial telephone cable which can handle 240 simultaneous telephone conversations on a single wire was completed between New York and Philadelphia.

(9) Grand Coulee engineers, faced with a river of muck that threatened to delay construction of the dam, ingeniously froze the flow into immobility and saved at least $100,000 in delays.

(10) Giant hinges of concrete for use in bridge construction were developed at the University of Illinois.

—o—

Electric rates in the United States have been cut $96,000,000 since 1933. For this period this amounts to nearly 4 times the reductions in gas; nearly 5 times those in telephones and more than 30 times those in water rates.

—o—

By a vote of 91,300 to 43,768 the voters of Los Angeles, on December 8, decided to purchase the properties of the Los Angeles Gas and Electric Corporation at a price of $46,340,000.

—o—

The Fuso Electrical Manufacturing Company of Tokyo, Japan have announced a plan to build a $250,000 light plant in Vancouver B. C. Canada. The plant will have a capacity of 20,000 lamps per day. Japanese machinery will be used and about 50% of the parts will be brought from Japan for assembly.

—o—

The so called "Committee of Nine" appointed by the Governor to investigate "Utah Governmental Units" has recently released the following reports:

(1) "An Economic Study of the Development of Utah's Coal Resources."

(2) "The Administration of Permanent School Funds in Utah."

(3) A Study of Utah's Public Utilities.

(4) "Homestead Exemption Proposal and Taxation."

RALPH R. WOOLLEY, *Secretary.*
303 Federal Bldg., Salt Lake City, Utah.

NEW JERSEY

Officials Hold Meeting

EXECUTIVE BOARD AND BOARD OF TRUSTEES OF THE NEW JERSEY ASSOCIATION OF PROFESSIONAL ENGINEERS AND LAND SURVEYROS, MET AT THE HOTEL DOUGLAS, NEWARK, N. J. ON MONDAY, NOVEMBER 30TH, 1936.

Resolution Presented by Hudson County Chapter

This RESOLUTION is sponsored by the Professional Engineers Club of Hudson County and is submitted for adoption by the New Jersey Association of Professional Engineers and Land Surveyors at the Annual Convention in January, 1937 for action by the 1937 Legislature of the State of New Jersey.

WHEREAS, A state-wide survey of road and traffic conditions is desirable in order to assist the Legislature in determining its future policy with respect both to the construction and maintenance of streets, roads, highways and footpaths and it is desireable to ascertain the facts with regard to volume, character and distribution of traffic on streets and on primary, secondary and tertiary roads; and

WHEREAS, it is essential that an economic survey be made to reveal sources of highway revenue to the end that road construction, both rural and urban, may be considered in accordance with the facts and funds equitably distributed for street and highway purposes; now, therefore, be it

RESOLVED, That a Commission is hereby created to consist of four citizens of the State representing respectively agricultural interests, municipalities, automobile owners and licensed professional engineers, one member of the faculty of Princeton University and one member of the faculty of Rutgers University, to be appointed by the Governor of the State of New Jersey and that the State Highway Commissioner shall by virtue of his office be a member thereof.

That such commission shall elect a Chairman and Vice-Chairman from its membership and shall appoint, and at pleasure remove, counsel, engineers or other assistants as may be necessary, including as far as practicable, persons experienced in the work to be undertaken by the Commission.

Such Commission shall have full power and authority and it shall be its duty to make a study and survey of the highway traffic needs and requirements of the State and shall formulate a complete highway and road building policy for the State and its sub-divisions and make recommendations as to the means of financing same. Said Commission shall make a thorough study of engineering economics and practical problems, such as new locations for avoiding congested areas; the construction, reconstruction and regulation of public streets, highways, roads, and footpaths in the State including a systematic all-year maintenance program and snow removal; a rational order of improving secondary roads and highways and local roads and their correlation with the highways on the primary system of the State; the classification of arterial highways; the adoption of the parkway system; highway research as a departmental and academic study together with such other recommendations for improvement and increased efficiency and economies in connection with high-

way construction, maintenance, classification, operation and supervision of arteries of vehicular traffic, bus and truck regulations thereon, the regulation of out-door advertising adjacent to highway rights of way and the installation of traffic signs and control signals by State agencies as may seem relevant in the premises.

In making any surveys, studies, examinations, investigations and compilations requiring engineering services, clerical and stenographic help, the Commission, with the consent of department heads, shall utilize such officers and employees of State Departments as far as practicable and as they find necessary and they may request and shall receive advice and expert assistance from such departments and commissions of the State and each and every officer or employee thereof; and the cost of such services and assistance and prementioned appointments shall be paid from any moneys allocated for such use by Federal Aid and/or appropriated and available for construction, reconstruction and maintenance of State Highways.

That such Commission shall have power to compel the attendance of witnesses within the State and the production of books and papers and otherwise shall have all of the powers of a Legislative Committee as provided by the Legislative Law, including the adoption of rules for the conduct of its proceedings.

That the members of such Commission shall receive no compensation for their services but shall be entitled to be paid their actual and necessary expenses incurred in the performance of their duties.

That such Commission shall hold public hearings within or without the State from time to time as the progress of its work may warrant and shall make a report of its proceedings together with its recommendations to the Legislature on or before the first day of February, 1938.

That the sum of 10,000 or so much thereof as may be needed is hereby appropriated from the contingent fund of the Legislature for the expenses necessarily incurred by the Commission, and the money so appropriated shall be paid from the treasury upon audit and warrant of the necessary State Officer upon vouchers approved by the chairman in the manner provided by law.

C. G. KREUGER, *Trustee.*
November 17, 1936.

WYOMING

Wyoming has recently inaugurated a Division of Sanitary Engineering in its Department of Public Health. "One of the functions of this Division is to foster the development and improvement of municipal water supplies and sewage disposal systems, and to examine plans and specifications for these improvements in accordance with Chapter 103, Article 2, Section 247—Revised Statutes of Wyoming, 1931." Engineers are advised that "the law requires the approval of this Department of all municipal water and sewage improvements before construction is started." In commenting upon this new Division and its work, one of our Members says:

> "The Department of Public Health appears to be composed of five M. Ds. I see no engineer on the board nor does the letter announce that any engineer is connected with the Division of Sanitary Engineering. It is not time that the public and the State elective and legislative officers were educated to, or at least informed of the fact that sanitary engineering is a profession entirely distinct and apart from the practice of medicine, the repair of the bones in the human anatomy, or the clipping of tonsils and is related to the medical profession only insofar as the M. D. is called upon to treat diseases. The training of an M. D. consists of an analysis of the human body, the effect of diseases upon the human body, and the treatment of such diseases. The education of a sanitary engineer involves a study of the science of bacteriology, together with the design and construction of treatment and disposal plants for domestic and industrial wastes. It would be no more consistent to place an undertaker or a brick layer in charge of the Division of Sanitary Engineering than it would be to place an M. D. in that position."

In other words—ENGINEERS FOR ENGINEERING.

DISTRICT OF COLUMBIA

The District of Columbia Society of Professional Engineers held its December meeting the evening of December 4th in the North Room of the Mayflower Hotel, Washington, D. C.

The Speaker of the evening was Dr. A. B. Bennett, Past President of the District of Columbia Medical Society, who spoke on the question, "Why Should A Professonal Man Organize?" Dr. Bennett outlined the structure and functions of the District of Columbia Medical Society and the American Medical Association in a way that indicated the possibilities and advantages of similar organization and activities for the engineering profession.

Dr. Bennett first spoke of the advantages of incorporation for an organization. He next pointed out that ethics were the keystone of any profession and described the Court of Ethics of the American Medical Association. He then sketched the functions of the Economic Committee, the Medical Defense Committee, the Bureau of Legal Medicine and the Department of Public Instruction of the American Medical Association. His account of the effect of classification of medical schools and hospitals by the American Medical Association was particularly enlightening as an instance of professional influence.

Altogether, Dr. Bennett's address was one of the best of a series of instructive and stimulating addresses and the Society is deeply grateful to him for his courtesy in speaking.

The regular business of the Society was in order following the speaker. A report of the Board of Directors' meeting of N. S. P. E. was given by Director Heine and the subject of proposed license legislation was discussed.

Secretary Willard S. Conlon of N. S. P. E. spoke briefly on matters pertaining to the National Society.

The announcement that Engineer Arthur V. Sheridan, President of the National Society of Professional Engineers would speak at the annual meeting of the District of Columbia Society on January 12th was enthusiastically received by all.

Transmitted by John W. Dunham for the American Engineer.

JOHN W. DUNHAM

TEXAS

Organization Meeting

The delegates and members of the Travis and Bexar Chapters of the Texas Society of Professional Engineers met in convention November 19, 1936, at the Driskill Hotel for the purpose of perfecting the State organization of the Texas Society of Professional Engineers.

Acting State Director, Mr. Jack W. Beretta of San Antonio, Texas, presented Mr. R. H. Knipping, President Travis Chapter, who extended the welcome and briefly reviewed the progress made to date. P. K. Lucke, President, and R. A. Nicholson, Secretary, Bexar Chapter, presided as temporary officers to conduct the meeting's business. A State Constitution and By-Laws was adopted as the first order of the meeting.

The following State officers were elected to the Texas Society of Professional Engineers:

President
Col. W. B. Tuttle, San Antonio.
1st Vice President
T. E. Taylor, Univ. of Texas, Austin.
2nd Vice President
W. E. Simpson, San Antonio.
Secretary
R. H. Knipping, Austin.
Treasurer
R. H. Guinn, Austin.

The following were chosen as Directors:
J. P. Exum, Austin.
M. P. Von Homeyer, Austin.
H. E. Stubbs, San Antonio.
E. W. Staph, San Antonio.
G. Wallace Smith, San Antonio.
H. R. F. Helland, San Antonio.
P. K. Lucke, San Antonio.
E. G. Franke, Austin.

The National Director is Mr. J. W. Beretta, San Antonio.

A letter was read from State Senator Houghton Brownlee, commending the engineers on their efforts to raise the standard of the profession, and endorsed the Society's first objective; namely, securing a registration and license law for engineers in Texas.

A letter was also read from Engineer D. B. Steinman, Past-President of the National Society of Professional Engineers, commending the engineers of Texas on taking this important step of placing the members of the various engineering branches in one society so that they can coordinate their efforts for proper legal recognition, and that the National Society stood ready to render its full support for the Texas Society's interest.

T. U. Taylor, Dean of Engineering, emeritus, of the University of Texas, and First Vice President of the State Society, addressed the convention, heartily endorsing the objectives of this society, which has the promise of bringing all of the branches of the profession together for recognition, and higher standing in this State than they have had before. It is fitting to say here that Mr. Taylor has been actively interested in teaching engineering at the University of Texas for over forty years, and his participation in this society's activities will give the profession a support that it greatly needs.

R. H. KNIPPING,
Secretary

The Travis Chapter of the Texas Society of Professional Engineers held their annual

meeting, December 10th. New officers were elected:

President ..... E. G. Franke
First Vice-President ..... T. U. Taylor
Second Vice-President ..... J. P. Exum
Executive Secretary ..... Trigg Twichell
Financial Sec-Tres. ..... H. M. Bohn
Directors:
R. H. Knipping
Hood Pitts
R. S. Guinn
Tate Dalrymple

CONNECTICUT

Connecticut Society Goes on Record in the Interest of Engineering Education

RESOLUTION ON ENGINEERING EDUCATION
(THIS SUPPORTS THE RESOLUTION ADOPTED OCTOBER 13, 1936 BY THE NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS AND APPROVED BY PRESIDENT FRANKLIN D. ROOSEVELT)

BE IT RESOLVED, That the CONNECTICUT SOCIETY OF PROFESSIONAL ENGINEERS in its 2nd annual convention assembled this the 12th day of December, 1936, at New Haven, Connecticut, does recommend to and urge upon the Engineering Schools and the Engineering Educators of the State of Connecticut, the establishment of suitable seminar courses in humanities, with particular emphasis on the social and economic problems with which society has to contend, and be it

FURTHER RESOLVED, That the Society does recommend to the said schools and educators that such subjects be definitely included in every curriculum of Engineering Education.

AND BE IT FINALLY RESOLVED, That the CONNECTICUT SOCIETY OF PROFESSIONAL ENGINEERS does urge upon the several Connecticut Chapters of Professional Engineers the necessity for having incorporated in the various statutes, regulating the practice of professional engineering, a requirement calling for a thorough examination in the subjects above noted as well as in scientific, technical and professional matters required of all applicants for the right to practice professional engineering.

Some Replies

James L. McConaughy,
Wesleyan University,
Middletown, Conn.:

"I am grateful to you for the copy of the Resolution, with which I find myself in hearty agreement."

R. B. Ogilby, President,
Trinity College,
Hartford, Conn.:

"We need the guidance of experts in engineering problems at every turn in municipal affairs, in institutional life and in the country at large. It is my conviction that the contribution engineers can give to public welfare will be greatly enhanced by the introduction into their education of broadening influences and the point of view of sympathy with the liberal arts, as well as thorough knowledge of technical problems."

Engineer Harris Appointed to the Housing Authority of Bridgeport

Under a recent Act of the Legislature of the State of Connecticut, Housing Authorities are authorized to carry on the program of Slum Clearance with funds obtained and borrowed from the Federal Government. The first Housing Authority formed under the Federal and State Laws in the country is THE HOUSING AUTHORITY OF BRIDGEPORT who will act as pioneers and trail blazers in the carrying out of this important work under local direction.

The five members of this Authority, named according to law by Mayor Jasper McLevy of Bridgeport, Conn., are Engineer Harry E. Harris, the Rev. Stephen J. Panik, John E. Lyddy, Harold Barker and John J. O'Brien.

Engineer Harris is a Consulting Engineer and is President of the CONNECTICUT SOCIETY OF PROFESSIONAL ENGINEERS, Chairman of the Public Relations Committee of the National Society of Professional engineers; Chairman of the Flood Control and Soil Conservation Committee of the NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS; and member of its Legislative Committee. He is also Chairman of the Legislative Committee of the CONNECTICUT SOCIETY OF PROFESSIONAL ENGINEERS which was the dominant factor in getting the Connecticut Engineers' Registration Act passed in 1934. He is Registered in Connecticut, Licensed in New York and Certified as a Professional Engineer by the National Bureau of Engineering Registration. He has been a resident of Bridgeport for twenty-two years and has always been prominent and active in Engineering, Educational and civic betterment. His consulting practice includes administrative controls, manufacturing methods, development, design, equipment systems, standardization. During the past few years he has made an intensive study of low cost housing, and has had built at his own expense and to his own specifications a successful and modern low priced model home with all conveniences including oil heat, air conditioning, open fireplace, vestibule, recreation room, outdoor living porch, etc., planned to give maximum room and comfort at minimum first cost and upkeep.

The appointments to this authority should receive the endorsement of the engineering profession, as Mayor McLevy has ably selected a capable and well-balanced group to head this important project which contemplates as its initial work the tearing down of thirty-one acres of sub-standard dwelling places in the center of the city and replacing them with low-cost housing construction built to present-day high standard living requirements. The cost of this initial work is computed at $6,500,000.00.

The Housing Authority must not only obtain the land, raze the present buildings, care for the tenants in the interim, build the houses and re-tenant them, but must also maintain this housing perpetually, and out of the rents collected, pay back the loan to the Federal Government within a specified time.

KENTUCKY

Annual Meeting January 29, 30, 1937

FRIDAY, JAN. 29, 1937

10:00 a. m.
Registration—South Room, Mezzanine Floor.

10:00-12:00 a. m.
Get-together—South Room, Mezzanine Floor.

12:00 noon
Luncheon—South Room, Mezzanine Floor.

1:30 p. m.
Inspection Trips. (Busses to leave from the Broadway entrance of the Brown Hotel promptly at 1:30 p. m.)

TRIP 1

Commissioners of Sewerage.
Point Sewerage Pumping Station.
Louisville Gas & Electric Co.,
Beargrass Gas Plant.
Louisville Water Company,
Pumping Station and Filteration Plant.
Elevated Crossing Project.

TRIP 2

Southern Bell Telephone Co.,
Automatic Exchange.
Louisville Gas & Electric Co.,
Hydro-Electric Station, and Waterside Steam Station.

6:30 p. m.
Annual Dinner—Roof Garden.
Welcome—James B. Wilson, Chief Engineer, City of Louisville Department of Public Works.
Address—"Highway Transportation," Thomas H. Cutler, Kentucky State Highway Engineer, Department of Highways.
Address—"Modern Finance," Milton Trost, Resident Partner, Stein Bros. & Boyce, Chicago, Ill.
Address—"The Engineer and the Lawyer," George W. Meuth, Regional Counsel Public Works Administration.
Appointment of Special Committees.
Election of Officers.

* * * * *

SATURDAY, JAN. 30, 1937

10:00 a. m.
Business Meeting—Roof Garden.
Reading of Minutes .
President's Report.
Treasurer's Report.
Reports of Standing Committees.
Unfinished Business.
New Business.
Reports of Special Committees.
Induction of Officers.

12:00-1:25 p. m.
Luncheon—Roof Garden.

1:30 p. m.
Inspection Trip 3. (Busses to leave from the Broadway entrance of the Brown Hotel promptly at 1:30.)
Commissioners of Sewage,
Mill Creek Project.
J. E. Seagram & Sons Co.,
Seagram's Distillery.
Public Works Administration,
18th St. Housing Project.
Public Works Administration,
7th St. Housing Project.

33RD ANNUAL CONVENTION
OF THE
AMERICAN CONCRETE INSTITUTE

Roosevelt Hotel, New York
Tuesday, Wednesday, Thursday and Friday
February 23, 24, 25, 26, 1937

NEW YORK A. C. I. CONVENTION COMMITTEE
J. P. H. Perry, *General Chairman*
Vice-President, Turner Construction Co.
420 Lexington Ave., New York, N. Y.
R. R. Zipprodt, *Secretary*
Associated Professor of Civil Engineering, Columbia University
Duff A. Abrams, Consulting Engineer
John G. Ahlers, Barney-Ahlers Construction Corp.

R. A. Backus, Engineer of Construction, Voorhees, Gmelin & Walker, Architects
R. L. Bertin, Chief Engineer, White Construction Co.
Joseph H. Chubb, Manager, Service Bureau, Pennsylvania-Dixie Cement Corp.
A. Burton Cohen, Consulting Engineer
J. R. Fairman, Manager, Eastern Offices, Portland Cement Association
C. F. Hulsart, Vice-President, Atlas-Lumnite Cement Co.
D. S. MacBride, Manager, "Incor" Division, Lone Star Cement Corp.
E. H. Praeger, Chief Engineer, Madigan-Hyland, Consulting Engineers
F. E. Schmitt, Editor, "Engineering News-Record"
A. W. Stephens, Consulting Engineer
D. B. Steinman, Consulting Engineer
M. M. Upson, President, Raymond Concrete Pile Co.

TUESDAY, FEB. 23, 2.00 P. M.

Notes on Concrete in France, Germany, Great Britain and Switzerland—two papers—F. R. McMillan (President of the Institute), Director of Research, Portland Cement Association, Chicago; A. J. Boase, Manager Structural and Technical Bureau, Portland Cement Association, Chicago. Messrs. McMillan and Boase gave three months of intensive study to cement and concrete developments in Europe last summer. In the text of his address and in numerous pictures he expects to show, Mr. Boase proposes to present notes on engineering and contracting practices in the countries he visited as compared with those in the United States.

"Construction Experiences of an American Contractor in London"—John G. Ahlers, Barney-Ahlers Construction Corp., New York.

"Grading and Workability"—W. H. Glanville, Department of Scientific and Industrial Research, England.

TUESDAY, FEBRUARY 23, 8:00 P. M.

"The Whats and Whys of the New Federal Specifications for Portland Cements"—Ben Moreell, Commander Civil Engineer Corps, United States Navy, Bureau of Yards and Docks, Washington, D. C.

"Cement and Concrete Studies on the Passamaquoddy Tidal Power Project"—Hugh J. Casey, Captain Corps of Engineers, United States Army, Boston, Mass.

"Portland-Puzzolan Cement Used in the Spillway Dam, Bonneville Project"—R. R. Clark, Designing Engineer of the Spillway Dam and H. E. Brown, Jr., Assistant Engineer—Office of District Engineer, War Department, Portland, Oregon.

"Properties of Cements and Concretes Containing Fly Ash"—Raymond E. Davis, Professor of Civil Engineering, University of California, and R. W. Carlson, Associate Professor of Civil Engineering, Massachusetts Institute of Technology.

"Resistance of Cement to the Corrosive Action of Sodium Sulphate Solutions"—Lewis H. Tuthill, Testing Engineer, Metropolitan Water District of Southern California.

WEDNESDAY, FEBRUARY 24, 9:30 A. M.

"Effect of Vibration on the Quality and Uniformity of Pavement Concrete"—F. H. Jackson, Senior Engineer of Tests, United States Bureau of Public Roads, Washington, D. C.

"Further Tests of High Early Strength Cement in Concrete Products"—Report of Committee 710, Use of High Early Strength Cement in Concrete Products, Benjamin Wilk, General Manager, Standard Building Products Co., Detroit, Chairman.

"A Further Study of the A. C. I. Building Code"—Report of Committee 501, Standard Building Code, A. W. Stephens, Chairman. (This committee's work resulted in the tentative adoption of new building regulations at the 1936 Convention of the Institute, last February.)

WEDNESDAY, FEBRUARY 24, 2:00 P. M.

"Concrete Repair and Maintenance"—R. B. Young, Testing Engineer, Hydro-Electric Power Commission of Ontario, Toronto.

"Maintenance and Repair of Concrete Structures in Railway Construction"—M. Hirschthal, Concrete Engineer, Delaware, Lackawanna & Western Railroad Co., Hoboken, N. J.

"Concrete Rehabilitation Work on the Uncompahgre Project"—A. B. Reeves, Engineer, United States Bureau of Reclamation, Denver.

WEDNESDAY, FEBRUARY 24, 7:00 P. M.

33RD ANNUAL DINNER

THURSDAY, FEBRUARY 25, 9:30 A. M.

"Rapid and Long Time Tests on Reinforced Concrete Knee Frames"—F. E. Richart, Research Professor of Engineering Materials, University of Illinois, and T. A. Olson, Chicago and Northwestern Railroad Co.

"Some Recent Developments in Foundation Design with Special Reference to Concrete"—Carlton S. Proctor, Moran Proctor and Freeman, Consulting Engineers, New York.

"Earthquakes and Reinforced Concrete"—J. J. Creskoff, Consulting Engineer, Philadelphia.

"Effect of Plastic Flow and Volume Changes on Design"—Report of Committee 313, Clyde T. Morris, Professor of Civil Engineering, Ohio State University, Chairman.

THURSDAY, FEBRUARY 25, 2:00 P. M.

"Concrete Research"—The entire afternoon period will be devoted to a meeting of the A. C. I. Committee 115, Research, for a round table discussion by and for research men under the auspices of the Research Committee's Executive Group, consisting of M. O. Withey, Chairman (University of Wisconsin), F. E. Richart, Vice-Chairman (University of Illinois), Inge Lyse, Secretary (Lehigh University), Raymond E. Davis (University of California), H. F. Gonnerman (Portland Cement Association), Clyde T. Morris (Ohio State University), D. E. Parsons (National Bureau of Standards), J. C. Pearson (Lehigh Portland Cement Co.). All who are interested in concrete research problems will be welcome to sit in at the Committee's meeting.

THURSDAY, FEBRUARY 25, 8:00 P. M.

"Progress Report of the Joint Committee on Specifications for Concrete and Reinforced Concrete"—The first "Joint Committee" was organized in 1904; made its report 12 years later; the second Joint Committee organized in 1920, made its still current report in 1924. The third Joint Committee was organized in 1930, under the chairmanship of Willis A. Slater. On Professor Slater's death in 1931, Alfred E. Lindau succeeded to the Chairmanship. The Committee is made up of five representatives each from the American Society of Civil Engineers, American Society for Testing Materials, Portland Cement Association, American Concrete Institute, American Railway Engineering Association, and the American Institute of Architects. In being presented as a recommended practice, the new report departs from its predecessors. Notable departures from the 1924 report are in matters of design. It places its chief emphasis on durability—strength no longer comes first. The Joint Committee once organized is an autonomous body. It's report is not subject to amendment by its sponsors organizations. Nevertheless the Joint Committee takes the opportunity afforded by the A. C. I. Convention to present its progress report for general discussion. To what extent this discussion will influence the final report, perhaps a year hence, remains to be seen.

FRIDAY, FEBRUARY 26, 2:00 P. M.

Further discussion of the Progress report of the Joint Committee.

* * *

MUNICIPAL CIVIL SERVICE COMMISSION

NOTICE OF EXAMINATION

DEPUTY TAX COMMISSIONER

(a) Railroads; (b) Telephones; (c) *General Utilities; (d) Electric Utilities; (e) Gas Utilities; (f) Utility Structures.

Separate lists will be established for each of the above specialized fields. Candidates may make application for more than one of these fields.

Salary: $4,000 per annum; pension; fair sick leave.

Ages: Maximum age, not over 49, on February 2, 1937.

Applications: Received 9 a. m., Tuesday, January 5, to 4 p. m., Tuesday, February 2, 1937, Room 1400, Municipal Building, Manhattan.

Duties: Under supervision, to do utility valuation and appraisal work of considerable difficulty and responsibility for the Department of Taxes; make field inspections and determine conditions and depreciations of utility property; analyze books and records; make reports; testify if required in connection with engineering investigations and appraisals of public utility projects and properties; perform related work as required.

Requirements: Candidates must be graduates of an engineering school registered by the University of the State of New York or must present a satisfactory equivalent education; must have had five years' experience in valuation work of magnitude and responsibility; at least three years of which must have been in each of the special fields in which the candidate elects to be examined, or three years' recent valuation experience with a governmental agency in work of a character to fit them to perform the duties of the position; or a satisfactory equivalent of the foregoing experience. All valuation work must have been within the last 15 years. Before certification candidates must have a New York State Professional Engineer's license as required by the Education Law.

Vacancies: 10 at $4,000—Two Railroads; one Telephone; two General Utilities; one Electric Utilities; one Gas Utilities; three Utility Structures. Two at $2,400—General Utilities.

Subjects and Weights: Experience, weight 5, 70 per cent required; written, weight 3, 75 per cent required on each part; oral, weight 2, 75 per cent required; 75 per cent general average required.

Experience will be rated after an oral interview and after examination of the applicant's experience statement upon the extent to which such experience has peculiarly fitted the candidate to make utility valuations and perform the other duties of the position. The rating will be based upon oral answers to questions concerning experience, upon the written experience sheet filed by the candidate, and upon such supplementary in-

*Will include combustion equipment.

formation obtained by special inquiries deemed requisite.

The oral examination will be given to determine the personal qualifications of the candidates and will be based upon the following factors: Appearance, manner, speech, judgment.

Medical and physical requirements, as posted on the Commission's bulletin board, must be met. Candidates may be rejected for any deficiency, abnormality or disease that tends to impair health or usefulness, such as defective vision, heart and lung diseases, uncontrolled hernia, paralysis and defective hearing.

Fee: $4, if candidate elects to be examined in only *one* of the six special fields; plus $2 for each additional field in which the candidate elects to be examined; to be paid five days prior to first test, but *after receipt of notice of examination date.* Only one fee, payable by check, money order or cash, at Room 1438, until 4 p. m., Saturdays 12 noon, where official receipt will be given. When sending fee by mail, state application number and enclose self-addressed envelope, full postage prepaid. *No fee for application. No refund of fee.*

MUNICIPAL CIVIL SERVICE COMMISSION, James E. Finegan, President; Ferdinand Q. Morton, Paul J. Kern, Commissioners.

William H. Allen, Secretary.

* * *

"ENGINEERING" SCHOOL IS MADE TO CHANGE ITS NAME

Following complaints from officers and members of the National Society of Professional Engineers, the New York State Education Department investigated a well-advertised commercial school giving a short course in the operation of Diesel engines and styling itself a "Diesel Engineering School." Under Article 66 of the State Education Law, the public authorities ruled that it was unlawful for an unauthorized institution to call itself an "Engineering School." To satisfy the requirements of the State Education Department, the name of the institution has now been changed from "Diesel Engineering School" to "Diesel *Engine* Institution."

AN OPEN LETTER TO THE EDITOR

Dear Editor:

Inasmuch as THE AMERICAN ENGINEER published in its December issue one side of the question regarding the effects of machines and the growth of population, I should like to take my stand, along with a number of others with whom I have discussed the issue, on the opposite side of the question.

It is encouraging that some engineers are reading works on social economics; but it is discouraging that some of them cannot keep the engineer's scientific attitude of mind when exchanging thoughts on this equally important phase of their lives.

In any problem all important factors must be given consideration. In reading the works of a philosopher, written a hundred years or more ago, it must be borne in mind that conditions have changed due to natural evolution and that, were the old philosopher alive today, he would in all probability be forced to revise his theory.

While it is true that some of the lower animals are cannibals, a great many more of the dumb brutes do not eat their kind. In the past, men have eaten human flesh for one of two reasons: (1) superstition—in an attempt to assume characteristics of the consumed individual; (2) to avoid actual death by starvation (as a last resort).

While the point raised by Mr. Solomon M. Swaab (THE AMERICAN ENGINEER, December 1936) is well taken—that those in the race today for place and self are, after a fashion, practicing cannibalism by the destruction of humans—such conduct cannot be justified in our advanced civilization by pointing back to the omissions of Leviticus and the Decalogue. The present form of cannibalism is just as much an evil as was eating the heart of a brave enemy or the primitive minded father eating his roasted babe.

In the distant past there have been times when floods and droughts may have justified cannibalism in the minds of the victims. In the days before the development of means for storage and transportation of food stuffs, normal times permitted each pair of hands to produce only enough food for their owner and his helpless offspring.

Now, we can store meat and fish in our modern refrigeration plants, grains of all kinds in our elevators, processed foods in our warehouses. These can be shipped, by boat, railroad or other means of transportation, with such speed that starvation can be prevented any place on the face of the earth. The work of the engineer makes all this possible.

In the minds of scientific political economists, the Malthusian theory died half a century ago. A quarter of a century ago every youth who studied economics in school knew what it was, why it was evolved, and why it could not be true. And now we have a writer in the organ of a "scientific society," published "in the interest of the American People and the Engineering Profession," digging from its grave an unappetizing piece of propaganda justifying cannibalism.

It is surely clear to everyone that machines are invented and used "where people actually set out to do as little work as possible for as much compensation as they can secure." This is one of the main things that make human beings different from the lower animals .... It is good! The opinions of Frederick the Great, Lord Byron and others who lived before the development of capitalism under which the "mechanization of industry" has reached such a high state of perfection, are of importance only to those who do not understand the possibilities of the present, or those who are willing to prostitute themselves in aiding the exploitation of labor by industry.

Mr. Swaab talks of "the exploitation of industry by labor." What he means he does not make clear, but that labor should use the machines it has built for all it can get out of them is certainly morally "right" and economically wise. Because the "ownership" (man-made legal conception) of machines has passed into the hands of a few monopolists during the historic development of capitalism, and since the use of the machines under capitalism is of interest to those monopolists only because of "economics affecting the pocketbook," there is no reason why any artificial limitation should be placed upon the use of the machinery in the production of wealth.

Scientists and economists have many times proven (in spite of Malthus) that no form of animal life, including man, could so overpopulate the earth as to consume all suitable food and be forced to race suicide by starvation. Natural laws prevent that which can only exist in the imagination of man. By the use of machines, man multiplied many times his productivity of food, clothing, shelter and other forms of wealth which he utilizes.

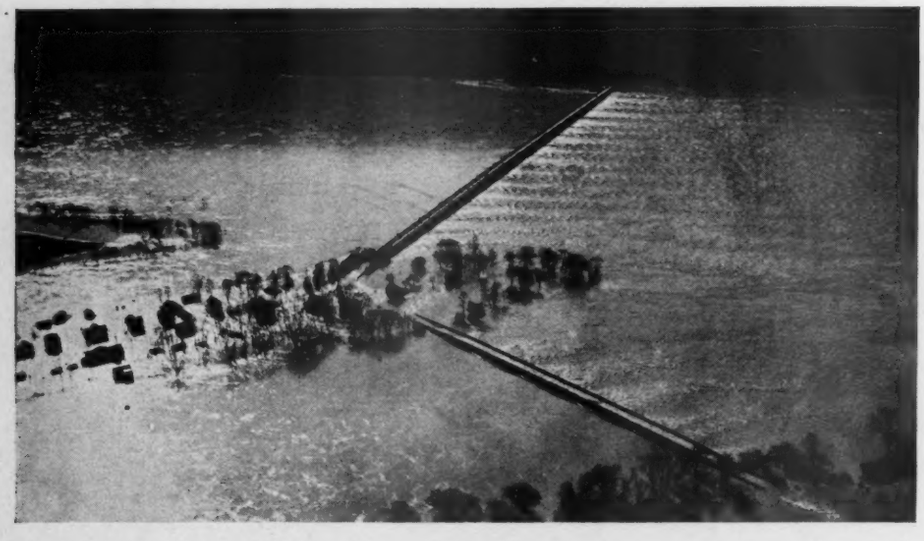
To engineers who design, build and supply

Apologies

To Mr. Solomon M. Swaab, author of an article which appeared in the December issue of THE AMERICAN ENGINEER and in refutation of which these current comments are made.

Inadvertently, Mr. Swaab's name was misspelled in the December issue, and since we know that this is one of the greatest offenses to human nature, the Editor trusts that Mr. Swaab will accept his sincere apologies!

FLOOD



energy to the machines, it should be as clear as it is to those men and women who operate the machines, that they should be used to the extent of satisfying all human wants for the necessities of life, as well as providing luxuries for those willing to work for them.

Mr. Swaab contends that "one of the principal reasons for conditions today is the excess population that exists in the world, over and above that required to do all the necessary and useful work." Nature provides ample raw materials and fertile fields, but those who are unemployed are prevented from using the machines and the land, and at the same time women and little children are operating the machines which are not idle, working long hours and for wages insufficient to maintain life.

He who says that there is an "excess of population" can no longer exploit all to the extent that less than all can be exploited. Since the monopolist can no longer employ all labor for long hours and at low wages for his profit, he would resort to sterilization and war to eliminate millions of people whom he cannot exploit. This is the fascist program.

The fascist (Nazi) is blind, for he cannot see that the total population is his market. For example, say the dictator rules that one-tenth of the population is surplus and must be eliminated, and it is eliminated. Then the market for production is reduced one-tenth, so production will be reduced one-tenth. Then another one-tenth of population will become surplus; surplus is again eliminated, production decreased, surplus reduced—and so on with zero population as a limit. And the rate of decrease would tend to increase as labor replacing machinery continues to be invented and constructed.

Mr. Swaab is worried that new commodities and utilities are not being invented so that their production will employ "a large part of the surplus population which exists in the world." The population (market) which cannot now as a whole purchase electricity, gas, refrigeration—not to mention homes, radios and cars (one-tenth cannot even buy food, clothing, medical and dental care required for civilized life) for which the potential demand already exists. How, then, is it expected that there can be an economic demand for these new things?

The fact is that many new things have been invented and some of them are already developed to a state ready for distribution when more people shall be able to first obtain the necessities of life and other things which they now want.

To solve our economic ills we need not resort to an insane rule of dictatorship—fascist or communist—but under democracy, by reduction of hours of employment, increase in wages or decrease in prices (they are relative), the abolition of child-labor and other measures proposed by organized labor, we shall free ourselves from wage slavery and gain the abundant life.

Are the engineers to join in this great movement for freedom from the bonds of an outworn system which has performed its historic mission? Are engineers to take their place beside those who otherwise contribute to the production of the wealth of the world? We can only be effective as organized engineers, joining with other organized workers, for a unity of purpose.

Major D. W. Blakeslee,
Member of the Pittsburgh Chapter, Pennsylvania Society of Professional Engineers

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